

Operating Recommendations for Willwood Dam

**Response to Comments
for Comment Period
Ending December 22, 2017**



June, 2019

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Recommended Citation: Willwood Dam Operating Recommendations. Response to Comments for Comment Period Ending December 22, 2017. June 2019.

1.0 SUMMARY

Willwood Dam is a 70 foot tall concrete diversion dam on the Shoshone River that was constructed in 1924 by the United States Bureau of Reclamation (USBR) as part of the Shoshone Irrigation Project. In 1950, as part of a contract between the Willwood Irrigation District (WID) and USBR, costs and responsibility for operations, maintenance, and repairs were turned over to the WID. In response to a 2016 sediment release from Willwood Dam, in the fall of 2017, the Wyoming Department of Environmental Quality/Water Quality Division (WDEQ/WQD), in cooperation with the Wyoming Game and Fish Department (WGFD), WID, USBR, the State Engineers Office (SEO), the Wyoming Water Development Office (WWDO), and other stakeholders, developed preliminary operating recommendations for the operation of Willwood Dam. The recommendations were intended to maintain suspended sediment and/or turbidity concentrations in the Shoshone River at levels necessary to meet this water's designated use as a cold water fishery while also allowing the WID to deliver water to its users; provide WID with the necessary flexibility to operate the dam in a manner that will protect existing infrastructure such as lowering the reservoir pool each fall to prevent ice damage to the canal gates; allow for gate maintenance when necessary; and minimize the accumulation of sediment behind Willwood Dam.

The recommendations included suspended sediment and turbidity recommendations as well as the rationale and information used to derive the recommendations. The operating recommendations were released for public review in November 2017 and discussed at a public meeting in Cody, Wyoming on November 28, 2017. The written public comment period closed on December 22, 2017. This document provides responses to the written comments received by WDEQ (see Appendix A for copies of submitted letters) as well as comments received at the November 28, 2017 public meeting in Cody, Wyoming. Although comments received at the public meeting on November 28, 2017 were provided responses at the meeting, a summary of responses to those comments is also provided in this document to ensure a complete record. Appendix B includes copies of responses provided by WGFD to written comments submitted to WDEQ and WGFD regarding the 2017 fall draw down.

The operating recommendations have been updated based on the comments received, additional data, and lessons learned since the recommendations were first drafted in 2017. It is understood by all parties that the recommendations are based on a limited amount of information and are to be reviewed and updated as more data and information become available.

2.0 COMMENTERS

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3.0 COMMENTS AND RESPONSES

Anderson, Lorna: After reading the recommendations, I don't see any plan to remove the existing pile of sediment that has accumulated behind Willwood Dam. It seems that the flushing flows initiated in 2016 are designed to move only the yearly accumulation of sediment. This does not address the years of accumulated sediment behind the dam. If the Irrigation District has plans for additional repairs to include all three sluice gates, the accumulated sediment would have to be moved to expose them. How much sediment will need to be removed to make this construction possible? Has this been mapped out and quantified? If it is all flushed out, what will be the effect on the river downstream, and Big Horn Lake? Has an economic analysis been done on the cost of sluice gate repairs, required dredging of sediment, and ongoing upkeep for the dam? Has an economic analysis been done for alternative means of delivering water to the users?

Department Response: As the commenter describes, the flushing flows that occurred in the spring of 2017 were not intended to mobilize the accumulated sediment behind Willwood Dam. Rather, the 2017 flushing flows were intended to mobilize the sediment that had been deposited downstream of Willwood Dam during the fall 2016 release. As the commenter also describes, the current draft of the operating recommendations do not address the accumulated sediment behind Willwood Dam, but were intended to protect infrastructure at Willwood Dam and create opportunities for WID to increase the amount of sediment they can release from behind the dam while also protecting the downstream fishery. It is anticipated that the operating recommendations will be updated as more information becomes available on the sensitivity of the fishery as well as the quantity and timing of the annual sediment load.

The 2009 Willwood Rehabilitation and GIS Level II [Wyoming Water Development](#) study estimated the amount of accumulated sediment behind the dam as approximately 365,000 cubic yards. The estimated cost to remove the sediment was \$3.65 million. The estimate was based on moving the sediment to a location within 2 miles of the dam to minimize hauling costs and included the cost of mobilization, temporary river diversion and dewatering, and removal and stockpiling.

The 2009 Willwood Rehabilitation and GIS Level II WWDO study also evaluated a partial removal option and limited siltation removal option. The partial siltation option evaluated removing sediment approximately 50 feet behind the dam and deep enough to expose the sluice gates to allow for operation of all three sluice gates. This option estimated that 255,000 cubic yards would need to be removed and would cost approximately \$2.55 million. The third option, limited siltation removal, was intended to remove a limited

amount of siltation behind the dam to expose the existing clogged sluice gates for maintenance and replacement. This option estimated that 45,500 cubic yards of sediment would need to be removed and would cost approximately \$600,000. The report estimated the cost of replacing the sluice gates alone, without any sediment removal, as \$556,000, plus the cost of river control. River control would be necessary to divert water around the dam so that the maintenance work could be completed.

In an effort to update this information, a bathymetric survey of the top of the accumulated sediment was conducted in the fall of 2017 by WDEQ and WGFD. Additional data has been collected and will be used to quantify the amount of accumulated sediment as well as any changes that have occurred since the fall of 2017. This information can then be used to update the cost estimates included in the 2009 WWDO study.

The cooperating agencies involved in Work Group 2 and the WID are currently evaluating many of the questions posed in this comment, including the best way to address the accumulated sediment so that the Irrigation District can perform the necessary work to replace the sluice gates at some point in the future.

Work Group 2 had multiple discussions in 2018 and 2019 about applying for a Wyoming Water Development Level 2 study to address these questions. Although there is keen interest in addressing as many of the questions posed in the comment as soon as possible, after many discussions, it was decided that it would be best to wait until more data and information were available on the amount of accumulated sediment as well as the quantity and timing of the annual sediment load coming into Willwood Dam. This information will be critical to identifying the best way to manage the existing deposited sediment as well as the annual sediment load. It is expected that this information will be available in the next few years, as the USGS equipment is fully installed and calibrated with field measurements.

Once estimates of the annual sediment load are available, as well as additional information on the quantity of sediment that has accumulated behind the dam, Work Group 2 will likely recommend that a WWDO study be completed to evaluate potential options for WID, including a potential change in the water delivery method. Once the study has been completed and additional information is available on the Shoshone River fishery downstream of Willwood Dam, Work Group 2 will be in a better position to make recommendations on how to manage both the annual sediment load as well as addressing the sediment that has accumulated behind Willwood Dam. It should be noted that any WWDO study must meet application and eligibility requirements and gain WWDO Director and Commission approval, ultimately followed by Legislative authorization. The next opportunity for a study application is March 1, 2020.

These recommendations will take into consideration the impact of any sediment releases on the downstream fishery and may include an analysis of potential impacts to Bighorn Lake should any large sediment releases be recommended. Work Group 2 is aware of concerns with sedimentation in Bighorn Lake and will continue to solicit input from the public while developing recommendations. It is important to note that Work Group 3 is working on reducing sediment inputs upstream of Willwood Dam. Work Group 2 expects that these efforts may help reduce sediment loading to Willwood Dam, which would in turn benefit Bighorn Lake since some of this sediment would have ultimately made its way to Bighorn Lake.

In the meantime, Work Group 2 will continue to collect data and information and revise the operating recommendations to most effectively protect infrastructure at Willwood Dam, manage sediment, as well as protect the Shoshone River fishery.

Board and General Members of the East Yellowstone Chapter of Trout Unlimited: Thank you for the opportunity to comment on the draft operating recommendations for Willwood Dam. We know a tremendous amount of work has gone into these proposed guidelines. For the most part, we agree with Working Group

#2's final draft position. We believe you have reached the best compromise on allowing the Willwood Irrigation District to operate within their constraints and the necessity to protect the downstream fisheries and private property rights. We do, however, have a few questions and concerns that we would like the group to consider before finalizing the operational guidelines. First, we are concerned with the potential environmental impact associated with a note to Table 2 which reads: "Exceptions: When it is not possible for the dam to operate within the recommendations and also maintain the pool elevation below the bottom of the canal gates, the Irrigation District will minimize the turbidity downstream to the best of their ability." This same concept is referenced in sections 3.2 and 3.3. This specific waiver seems to give a general approval to the Willwood Irrigation District to do whatever they see fit if they believe that pool depth may raise to a level that might cause problems for their irrigation system head-gate, such as freezing. We are aware that the District has stated that the gates can only be protected from freezing and resultant damage if water is kept below that level. We ask that the Working Group do a thorough and independent evaluation of other engineering approaches that might be available to protect the canal gates from the effects of freezing and thus preserve water quality. As this exception is currently stated, the Willwood Irrigation District has the authority to violate water quality criteria in order to protect a canal gate. The environmental consequences of the violation of water quality criteria may far exceed any maintenance cost to the canal gates.

Department Response: WDEQ recognizes that there may be concerns regarding the exceptions included in the operating recommendations. The exceptions were included to recognize that WID may have difficulty meeting the recommended turbidity levels while also preventing damage to the existing infrastructure. The exceptions were also included to recognize that limiting the dam to strict 10 NTU increase has resulted in the significant accumulation of sediment and unintentional episodic releases of large amounts of sediment that have resulted in fish kills. The operating recommendations are also based on limited information and should be considered a working draft as more and more information is collected. Work Group 2 thought that the exceptions were important because not all the conditions are known and providing flexibility is important given the unknowns. It is important to note that the operating recommendations do not allow the dam to exceed the recommendations without any consequences and without consultation with the agencies involved in Work Group 2. The operating recommendations include a notification process so that in circumstances where WID is exceeding the recommendations, they must notify the other cooperators in Work Group 2 to determine whether or not they should consider raising the pool elevation to prevent impacts to the downstream fishery. The notification process is intended to initiate a dialogue between cooperators so that everyone is aware of the potential consequences of how the dam is being operated and make recommendations on potential operational changes given a particular situation.

Work Group 2 will continue to evaluate potential options for the WID to minimize impacts to the downstream fishery. Work Group 2 also recognizes that there are still a number of outstanding questions related to the downstream fishery that should be answered to ensure that the operating recommendations are as accurate as possible. The group continues to explore the best ways to gather this information and will likely be conducting additional studies on the fishery in the future.

Board and General Members of the East Yellowstone Chapter of Trout Unlimited: A second concern that we have is that the use of the penstock to allow for pool elevation regulation has not been considered in this draft plan. Since it is located at an elevation above the sluice gates but below the irrigation canal-gates, it would seem to be an important option that should be considered in order to lower the water pool level or to maintain that level. No doubt, use of this penstock would require retrofitting with a functional gate; however, that option should be adequately explored by an independent review. The use of the penstock to lower the pool height to below the head-gate would prevent significant amounts of sediment from being released in one large event and could be an additional tool in preventing freeze-ups of the head-gate. The use of the penstock may also allow for more current velocity to form during high flow events that may allow more sediment to be

mobilized rather than deposited. It is our understanding that Engineering Associates has already suggested that this option be explored.

Department Response: WID did explore the possibility of being able to use the penstock to regulate the pool elevation because they saw merits in the additional flexibility this may provide. The contract between WID and USBR requires WID to obtain written approval from USBR prior to any substantial change in the irrigation works. When WID inquired with USBR regarding the use of the penstock as another means to regulate water flow, USBR determined that it would be necessary to conduct a complete engineering evaluation of the structure of the dam prior to doing any such modification. WID did not pursue the engineering evaluation further because it was determined that getting the third sluice gate operational would be a higher priority than installing a gate in the penstock. Work Group 2 appreciates the recommendation and will continue to evaluate this as a potential option along with WID and USBR if it is determined to be a high priority.

Board and General Members of the East Yellowstone Chapter of Trout Unlimited: Our third and principle concern with the Draft Operating Agreement is that Working Group #2 has not explored the modification of the water deliver infrastructure to provide the Willwood Irrigation District with the water they need while minimizing the harmful impacts to aquatic life and aquatic habitats below Willwood Dam. Providing the District with a water delivery alternative and potential removal of Willwood Dam may be the best ultimate option. We recommend that Work Group #2 takes a parallel path while working on the operational agreement that provides for a thorough investigation of alternative water sources for Willwood Irrigation District. We all know the long history of problems with water quality below the dam including multiple fish kills over the years and strained relationships with downstream fisheries managers, land owners and recreational users. We also all know the tremendous challenges that face the Willwood Irrigation District in trying to avoid these problems. We know that in the future, no matter how the dam is operated, that huge amounts of sediment will continue to flow into the impoundment above the dam and cause problems as the District attempts to deal with that sediment. The problems will be unavoidable due to the design of the dam and the location of the dam (below the McCullough Peaks area and furthest downstream of the major agricultural and irrigation systems). For sixty years, groups have worked unsuccessfully to find an environmentally friendly way to route the annual sediment load through the Willwood Dam. Willwood Irrigation District, the agencies involved, and the public who value this resource cannot afford to evaluate an operational plan for three years and then decide to investigate alternative sources. These investigations need to occur simultaneously. In our opinion, the inherent issues with the dam operations cannot be completely or even adequately addressed with the current dam location and structure (the requirement to raise the water level some 60 feet above normal channel height). A potential solution is to change the point of diversion for the Willwood Irrigation system. We are not suggesting that this option replace the work that is being done right now to minimize sediment releases or to optimize Willwood Dam operations. We would suggest that a parallel study be initiated to investigate the feasibility of other options for alternative points of diversion and their respective costs (and the availability of funds to cover those costs). Among those alternative points of diversion would be an up-river diversion that would not require a 60 foot tall dam, increasing the amount of irrigation water coming out of the Shoshone Irrigation District's Corbett diversion and a split of that water to the Willwood system, a similar irrigation water sharing out of the Heart Mountain Irrigation District's Buffalo Bill Reservoir diversion, or other as yet unidentified upstream options. These options would avoid sediment buildup behind a tall dam structure, avoid the accumulation of all of the sediment runoff from the McCullough Peaks, and avoid costly repairs and maintenance on an aging Willwood Dam that is constantly having to deal with large amounts of sediment. It would also minimize conflicts with the downstream users of the River. It would seem to be a "win" for all.

Department Response: As noted in the response to Lorna Anderson, above, Work Group 2 is aware of the keen interest in evaluating other water delivery options for the WID. Work Group 2, including staff from the

Wyoming Water Development Office, explored the idea of a feasibility study for Willwood Dam that would include an evaluation of other potential water delivery options. However, it was determined that the study would be premature because we will soon have more accurate data on the annual sediment load entering Willwood Dam as well as more accurate estimates of the amount of sediment that has accumulated behind Willwood Dam. The Work Group believes that this information is critical to identifying the best long-term solutions for WID and the Shoshone River.

Board and General Members of the East Yellowstone Chapter of Trout Unlimited: We also suggest that in this parallel study that detailed analyses be conducted that quantify how much sediment needs to be removed from upstream of Willwood Dam to allow for the sluice gates to be replaced. Further, the dam repair costs should include two alternatives: 1) the cost of dredging and removing the calculated quantity of sediment from above Willwood Dam and, 2) the environmental effects of sediment sluicing to the Shoshone River both upstream and downstream of the Dam and to Big Horn Reservoir. We would suggest that this feasibility study be conducted in parallel with the work that is currently underway to optimize Willwood Dam operations. We do not believe we should wait the mentioned three year time period to find out if current operations can be adequately altered to an "acceptable" point for all parties. We all know that no matter how diligent the Willwood Irrigation District is; there will continue to be problems, un-anticipated circumstances, and unhappiness with the results. With a simultaneous exploration of the options, the entire community will be in a better position in three years to pick the best option going forward. Otherwise, further and un-necessary delays will result. The cost of this feasibility study should be minimal and funds could probably be identified.

Department Response: Please refer to response provided to Lorna Anderson, above.

Board and General Members of the East Yellowstone Chapter of Trout Unlimited: One fourth and final point should be made. During the review process and at the public meeting, a discussion occurred which seems to pit access to the river above Willwood Dam versus downstream brown trout recruitment. Some believe that the pool height above the dam should not be drawn down until the latest possible time in order to preserve for the longest period the use of the boat ramp immediately above Willwood Dam. This would jeopardize the spawning beds downstream of the Dam and the resultant brown trout recruitment into this wild population. We do not support this argument. We believe that brown trout recruitment and upstream recreational (fishing and hunting) access can both be accommodated. Efforts should be made to secure a year-round and upgraded access at Buck Creek for the public as an alternative to the Willwood access just above the Dam. This would allow the October 15th draw-down as suggested in the Draft Plan along with the resultant protection of the brown trout recruitment, and provide year-round recreational boating egress. This option would, in fact, be better than a short extension of the use of the Willwood boat ramp as the recreational egress point could be used all year. The Working Group should make this their priority, rather than considering a delay in the drawn down until later in December. This would be a win-win for everyone.

Department Response: Work Group 2 was charged with protecting WID infrastructure and helping WID address sediment management at Willwood Dam while also protecting the downstream Shoshone River fishery. As such, these objectives will continue to take priority when developing operating recommendations for Willwood Dam. WGFD also provided some thoughtful responses to members of the public that had expressed concern regarding access (see Appendix B).

Fiedor, Joseph: This letter contains my comments regarding the Public meeting held at the Big Horn Federal Office building in Cody on November 28, 2017.

While the focus of the working committees has been clearly outlined, it is my opinion that there is a secondary, important, oversight, which is the Outdoor Recreation component. You did recognize outdoor recreation and

some of the superficial affects. However, I feel the OR component is of relevant importance, too. Many of us choose to live in the Cody region because of the quality of life and OR opportunities available. This stated, I believe the OR component is under represented with the overall Willwood Dam and Shoshone River mediation project. Surely there must be someone in the state or federal government who could be invited to represent the OR component on the executive committee.

Department Response: Individuals or organizations that are interested in providing feedback to Work Group 2 should contact David Waterstreet at 307-777-6709 or David.Waterstreet@wyo.gov.

Fiedor, Joseph: Secondly, relevant to OR and based upon comments made at the subject meeting, I don't accept that an access ramp on the Willwood Reservoir is a not doable. It might be cost prohibitive for one agency alone, but not for a multi-agency effort. If the agencies involved, which should perhaps include the Bureau of Land Management which is a stakeholder, or should be, want to make an access ramp available at Willwood Reservoir to be used by the public and for agency use, then it can happen. (Ask Jeremy Zumberg. He and a work crew were dragging a raft up the shore when I visited the site on Wed., Nov 29th). Without going into too much design detail, I'll just add that the lower portion of the incline does not need to support vehicle use. A simple, slightly curved incline constructed with geo-textile covered with rock covered with rock and top dressed with coarse gravel could accommodate users carrying of dragging small watercraft up to a vehicle ramp ready to intercept the shoreline. That portion of the ramp below the high waterline will likely need annual maintenance to remove sediment deposits. This request for a serviceable ramp for fluctuating reservoir levels would be a reasonable trade-off for recreational users as compared to the major accommodations being made for reservoir and dam management. Eleven miles for Shoshone River would be made accessible for aquatic related recreations for twelve months of the year with relatively safe and legal ingress and egress from Corbett Dam to the Willwood Reservoir section of the river. I recognize and commend all the hard work of the committee members and accept that the management recommendations are appropriate and necessary at this time including the lowering of the water level in Willwood Reservoir. That said, any competent agency civil engineer should have no trouble designing this ramp. Funding should not be a major expense either when quantified with the over expense of this project. Consider that volunteer groups and individuals would probably be very willing to help with the physical work.

Department Response: The development or maintenance of the boat ramp or other public access at Willwood Dam is outside the scope of Work Group 2. The boat ramp is on Bureau of Reclamation land that is managed for recreation by the WGFD. Questions or comments regarding the boat ramp should be addressed directly to the WGFD. Please see the responses provided by the WGFD in Appendix B.

Fiedor, Joseph: My final comments are a collective of thoughts from comments I heard at the meeting. Fish spawning times on the Shoshone River occur Spring and Fall. Spawning time alone is not enough for consideration with regard to turbidity and duration because trout eggs are in redds generally for 60 days, alevins spend another 2-4 weeks in the redds and after that the fry emerge and are highly vulnerable to mortality if the water is not shallow or slow moving. This makes the study of the tributaries flowing into the Shoshone River in the project area vitally important in my view. Natural recruitment of trout and whitefish should be of high importance. Stocking of trout should not be of major importance. I thought you need a masterful job keeping the meeting on track and I was surprised by Roger Smith, who did an excellent job with his presentation and responding to the sluice gate question.

Department Response: The operating recommendations for Willwood Dam were drafted to recognize the importance of natural recruitment of Brown Trout and Mountain Whitefish. The recommendations not only take into consideration the spawning period during mid-October to mid-November, but also the sensitive periods for egg and juvenile development and recommend that turbidity levels be kept low throughout the

entire period between early November and the end of March. Work Group 2 also agrees that additional study on the Shoshone River fishery is necessary, including determining the importance of the tributaries during spawning. To this end, Work Group 2 has identified a number of questions regarding the Shoshone River fishery that should be answered so that the operating recommendations are as accurate as possible and the potential impacts of sediment management at Willwood Dam to the fishery can be properly evaluated. Work Group 2 coordinated with fisheries biologists at the University of Wyoming to develop and submit a proposal for the Water Research Program to synthesize the current state of knowledge of sediment effects on fisheries and evaluate metrics and approaches for assessing sediment levels in rivers. The project will also compile current best management practices for managing sediment behind dams. This project was funded by the Legislature and will commence in 2019. WDEQ and WGFD have also begun to identify trout spawning habitat downstream of Willwood Dam to help evaluate the impact of sediment releases on the downstream fishery.

Bollinger, Kirk: Appreciates the work the group has done. This time of year is when the high flow is down below Willwood Dam in a normal water year. The irrigation water usually takes out so much water that the flow is usually higher when the irrigation water is shut down for the winter. This is the opposite of what I see in your plan.

Department Response: As noted at the public meeting, Work Group 2 does recognize that the flow downstream of Willwood Dam is heavily impacted by irrigation diversions. That said, the operating recommendations are based on the best currently available flow data from USGS and USBR. Work Group 2 also expects that the flow information collected by the USGS gage downstream of Willwood Dam as part of Work Group 2's current work will help provide additional information on flow volumes and timing. This information can then be used in conjunction with additional information on the fishery to determine the best time to potentially release sediment.

Camp, Bill: Do all the sluice gates work? Is the dam being operated as it was originally designed to do?

Department Response: As WID noted at the public meeting on November 28, 2017, the third sluice gate is buried in sediment and is not operational. The second gate was buried in sediment and not functional for a period of time, but is currently functional. WID relayed that the operations require that they open the first gate, when that runs out of capacity, they open the second gate, and as needed, they would open the third gate. Only rarely is the third gate needed, so the fact that it is not operational does not have much of an impact.

Crooks, Robert: The only way to access is to float. With the lowering of the dam, that is almost impossible. Was this access considered before this plan was implemented? Since this was so dramatic, why wasn't the public asked their opinion prior to implementation?

George, Josh: Would not be content just building a boat ramp. My whole life we've hunted ducks down there, and having that water backed up and slowed down above Willwood is the best for duck hunting. You made a canyon out of the best place to duck hunt.

Department Response: As noted at the public meeting, Work Group 2 is dealing with a number of variables and working through each of the issues as they arise. In addition, please see the response from the WGFD in Appendix B.

Livingston, Lee: Will the PowerPoints from tonight be on the website? Is there any data from above Buffalo Bill about sediment upstream of the Buffalo Bill Dam and what makes it down to Willwood?

Department Response: The powerpoint presentations from the November 28, 2017 public meeting are available on the Willwood Project webpage: <http://deq.wyoming.gov/wqd/willwood-dam-and-shoshone-river/>. The data currently being collected by the USGS will provide information on the quantity and timing of suspended sediment on the Shoshone River upstream and downstream of Willwood Dam.

Sweet, Dave: We've looked at how to change the operations. Over the years, there have been multiple fish kills. We should look at changing the point of diversion at some point upstream.

Department Response: As noted in the responses above, Work Group 2 concluded that data on the annual sediment load and accumulated sediment behind the dam should be available prior to a submitting a proposal for a potential Level 2 WWDO study that would evaluate potential changes in the point of diversion. It was understood that this information will be critical in determining the best path forward for WID and the Shoshone River in general.

Stukey, Royal: I wrote a research paper on this last year, and when I was researching it, the original operating plan was there, and it called for alternating the sluice gates.

Department Response: WID relayed at the public meeting that the operating plan has been revised several times and that they are going by the latest revision. Future revisions to the operating plan may incorporate modifications to more effectively manage sediment at the dam.

APPENDIX A. Written Comments Received by December 22, 2017.

Joseph A Fiedor
3607 Maple Leaf Ave
Cody, WY 82414

RECEIVED
DEC 04 2017
DEQ WATER QUALITY

Nov 30, 2017

RE: Willwood Dam and Shoshone River
Cody Meeting Follow-up Comments

David Waterstreet
DEQ/WQD
200 West 17th St.
Cheyenne, WY 82002

Dear Mr. Waterstreet:

This letter contains my comments regarding the Public meeting held at the Big Horn Federal Office building in Cody on November 28, 2017.

While the focus of the working committees has been clearly outlined, it is my opinion that there is a secondary, important, oversight, which is the Outdoor Recreation component. You did recognize outdoor recreation and some of the superficial affects. However, I feel the OR component is of relevant importance, too. Many of us choose to live in the Cody region because of the quality of life and OR opportunities available. This stated, I believe the OR component is under represented with the overall Willwood Dam and Shoshone River mediation project. Surely there must be someone in state or federal government who could be invited to represent the OR component on the executive committee?

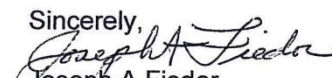
Secondly, relevant to OR and based upon comments made at the subject meeting, I don't accept that an access ramp on the Willwood Reservoir is a not doable. It might be cost prohibitive for one agency alone, but not for a multi-agency effort. If the agencies involved, which should perhaps include the Bureau of Land Management which is a stakeholder, or should be, want to make an access ramp available at Willwood Reservoir to be used by the public and for agency use, then it can happen. (Ask Jeremy Zumberge. He and a work crew were dragging a raft up the shore when I visited the site on Wed., Nov 29th.) Without going into too much design detail, I'll just add that the lower portion of the incline does not need to support vehicle use. A simple, slightly curved incline constructed with geo-textile covered with rock and top dressed with coarse gravel could accommodate users carrying of dragging small watercraft up to a vehicle ready ramp intercept further up the shoreline. That portion of the ramp below the high waterline will likely need annual maintenance to remove sediment deposits. This request for a serviceable ramp for fluctuating reservoir levels would be a reasonable trade-off for recreational users as compared to the major accommodations being made for reservoir and dam management. Eleven miles for Shoshone River

would be made accessible for aquatic related recreations for twelve months of the year with relatively safe and legal ingress and egress from Corbett Dam to the Willwood Reservoir section of the river. I recognize and commend all the hard work of the committee members and accept that the management recommendations are appropriate and necessary at this time including the lowering of the water level in Willwood Reservoir. That said, any competent agency civil engineer should have no trouble designing this ramp. Funding should not be a major expense either when quantified with the over expense of this project. Consider that volunteer groups and individuals would probably be very willing to help with the physical work.

My final comments are a collective of thoughts from comments I heard at the meeting. Fish spawning times on the Shoshone River occur Spring and Fall. Spawning time alone is not enough for consideration with regard to turbidity and duration because trout eggs are in redds generally for 60 days, alevins spend another 2-4 weeks in the redds and after that the fry emerge and are highly vulnerable to mortality if the water is not shallow and slow moving. This makes the study of the tributaries flowing into the Shoshone River in the project area vitally important in my view. Natural recruitment of trout and whitefish should be of high importance. Stocking of trout should not be of major importance. I thought you did a masterful job keeping the meeting on track and I was surprised by Roger Smith, who did an excellent job with his presentation and responding to the sluice gate question.

Thank you for this opportunity to comment. I can be contacted by phone at 570-854-2125, email at joseph.fiedor@gmail.com or at my address by letter.

Sincerely,



Joseph A Fiedor

Cc: Alan Osterland
WY Game & Fish Hq.
5400 Bishop Blvd.
Cheyenne, WY 82006

Sam Hochhalter
2820 State Highway 120
Cody, WY 82414

APPENDIX B. Wyoming Game and Fish Department Responses to Comments Concerning the Fall 2017 Drawdown.



WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006

Phone: (307) 777-4600 Fax: (307) 777-4699

wgfd.wyo.gov

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PETER J. DUBE
DAVID RAEI
MIKE SCHMID

December 1, 2017

Josh George
1308 Stampede Avenue
Cody, WY 82414

Dear Mr. George:

Thank you for sharing your concerns regarding access to the lower Shoshone River around the Willwood Dam. As you may know, there has been a concerted effort on behalf of those agencies and entities involved with the natural resources around Willwood Dam to find solutions to better manage sediment, water quality, fish populations, and water delivery infrastructure above and below Willwood Dam. The reality of this complex issue is that there are no easy solutions and all decisions come with downsides. I sincerely hope the following explanation helps shed light on how the Willwood Working Group 2 crafted the trial operating plan for this year (Fall 2017 – Spring 2018). The operating plan can and likely will be modified in future years. I am sure your concerns about sportsmen access will be taken into account when discussing operations for upcoming years.

I understand your frustration as a waterfowl hunter and hopefully the following will provide some information on this year's draw down of the pool behind the Willwood dam. The Wyoming Game and Fish Department (Department) has taken steps to warn floaters of the river conditions from Buck Creek to the Willwood take out. On November 7, 2017, Department personnel in Cody put up signs at Buck Creek. It is unfortunate that the release events in October of 2016 made the new boat ramp at Willwood dam unusable. The Department has been working diligently to mitigate the fishery impacts that could potentially occur if large sediment loads are put into the river. This was also voiced to the Department by the public after the October 2016 event.

The Department has been advising the Wyoming Department of Environmental Quality on an operating plan that would provide water quality standards that protect the Shoshone River's designated use as a coldwater fishery. A core responsibility of the Department is to manage for healthy populations of wildlife. The recommendations that the Department gave to the Willwood Working Group 2 to focus the reservoir drawdown and subsequent increase in turbidity in late October were premised on minimizing the impact of sedimentation on brown trout eggs by releasing sediment prior to the peak of brown trout spawn (peak brown trout spawn is in November). A drawdown in December would result in sedimentation and increased mortality of brown trout and whitefish eggs that were spawned in the main channel of the Shoshone River. An earlier draw down does not work into the irrigation districts management plan.

"Conserving Wildlife - Serving People"

Josh George
December 1, 2017
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Access to lands or streams that do not support healthy populations of fish and wildlife is of little value to sportsmen. With this in mind, the primary objective for the Department is to make recommendations to the Willwood Working Groups that will maintain or enhance the trout and native fish populations below Willwood Dam. As mentioned earlier, there are downsides to every decision associated with Willwood. The loss of waterfowl hunting and angling opportunity is the downside to the late October drawdown. However, minimizing the impact of fall sediment releases to brown trout and whitefish spawning and recruitment is a high priority.

There will be a public meeting to discuss progress made by the Willwood Working Groups on November 28, 2017. The meeting will be held from 6:00 to 8:00 PM in the basement of the Big Horn Federal Bank Office at 1701 Stampede Avenue, Cody, Wyoming. This meeting will be a great opportunity for the public to hear more about the challenges associated with this issue and to provide the working groups their input and concerns.

The Department will continue to work with the Working Groups that were created as a result of the 2016 incident at Willwood. Additionally, the Department will collaborate with irrigators, land managers and other entities to improve water quality in the Shoshone River downstream of Buffalo Bill Dam. Ultimately, these entities are working toward long-term solutions that will reduce sedimentation in the lower Shoshone River.

Sincerely,



Scott Talbott
Director

ST/sh

Enclosure(s)

cc: Alan Osterland, Chief of Fisheries
Dirk Miller, Deputy Chief of Fisheries
Dave Zafft, Fish Management Coordinator
Mark Smith, Assistant Fish Management Coordinator
Sam Hochhalter, Cody Regional Fisheries Supervisor
File



WYOMING GAME AND FISH DEPARTMENT

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DAVID RAE
MIKE SCHMID

December 1, 2017

Dusty Richardson
6148 Autumnwood Drive
Billings, MT 59106

Dear Mr. Richardson:

On behalf of the Wyoming Game and Fish Department (Department), I would like to thank you for sharing your concerns regarding access to the lower Shoshone River around the Willwood Dam. As you know, there has been a concerted effort on behalf of those agencies and entities involved with the natural resources around Willwood Dam to find solutions to better manage sediment, water quality, fish populations, and water delivery infrastructure above and below Willwood Dam. The reality of this complex issue is that there are no easy solutions and all decisions come with downsides. I sincerely hope the following explanation helps shed light on how the Willwood Working Group 2 crafted the trial operating plan for this year (fall 2017 – spring 2018). The operating plan can and likely will be modified in future years. I am sure your concerns about sportsmen access will be taken into account when discussing operations for upcoming years.

I am thankful that your outing ended safely. The Department has taken steps to warn floaters of the river conditions from Buck Creek to the Willwood take out. On November 7, 2017, Department personnel in Cody put up signs at Buck Creek. It is unfortunate that the release events in October of 2016 have made the new boat ramp at Willwood dam unusable. The Department has been working hard to mitigate the fishery impacts that could potentially occur if large sediment loads are put into the river. This was also voiced to the Department by the public after the October 2016 event.

The Department has been advising the Wyoming Department of Environmental Quality on an operating plan that would provide water quality standards that protect the Shoshone River's designated use as a coldwater fishery. A core responsibility of the Department is to manage for healthy populations of wildlife. The recommendations that the Department gave to the Willwood Working Group 2 to focus the reservoir drawdown and subsequent increase in turbidity in late October was premised on minimizing the impact of sedimentation on brown trout eggs by releasing sediment prior to the peak of brown trout spawn (peak brown trout spawn is in November). A drawdown in December would result in sedimentation and increased mortality of brown trout and whitefish eggs that were spawned in the main channel of the Shoshone River.

"Conserving Wildlife - Serving People"

Dusty Richardson
December 1, 2017
Page 2

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The Department will continue to work with the Working Groups that were created as a result of the 2016 incident at Willwood. Additionally, the Department will collaborate with irrigators, land managers and other entities to improve water quality in the Shoshone River downstream of Buffalo Bill Dam. Ultimately, these entities are working toward long-term solutions that will reduce sedimentation in the lower Shoshone River.

Sincerely,



Scott Talbott
Director

ST/sh

Enclosure(s)

cc: Alan Osterland, Chief of Fisheries
Dirk Miller, Deputy Chief of Fisheries
Dave Zafft, Fish Management Coordinator
Mark Smith, Assistant Fish Management Coordinator
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